Understanding the Role and Potential of M-Health during Covid-19 Crisis in India

PART

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Stakeholders in mobile health and telemedicine sector

OVER THE LAST FEW YEARS M-HEALTH AND TELEMEDICINE have tapped into a broad range of public health initiatives, delivering primary health services at low cost[1]. Mobile health facilities have been used to train Accredited Social Health Activists (ASHA) and Auxiliary Nurse Midwife (ANM)s for effective intervention in bringing down maternal and child mortality rates, manage non –communicable diseases through SMS alerts containing disease related information, prevent and control deadly diseases like Tuberculosis and HIV AIDS as well as collect data for disease surveillance[2]. Similarly telemedicine has been used to educate patients and service providers regarding illnesses, deliver healthcare at remote locations, monitor patient's progress and provide health care delivery to disaster stricken areas[3].

Their market is driven by patients, caregivers, physicians, researchers, the startups which develop apps and big pharmaceutical/ biotech companies, all of whom are major stakeholders in the business[4][5]. The allure of m-health and telemedicine is going to escalate further with the increase in mobile phone penetration[6] and the recent COVID-19 outbreak which has pushed people into practicing physical distancing for breaking the chain of infection[7].

Patients are the key stakeholders who use their mobile devices to access healthcare services. They also form the majority of mobile application users. They are instructed to self-monitor and self-care against illnesses through m-health and telemedicine services. Their interaction with the healthcare providers and valuable feedback will contribute to making the e-health domain more user- friendly with fewer medical errors.

Families and caregivers who are responsible for patient's care delivery and care coordination are also stakeholders in m-health and telemedicine services as they make use of these facilities to efficiently manage the well-being of their loved ones[8].

Healthcare professionals comprise of physicians, nurses, laboratory technicians, pharmacists, etc. each of whom contribute to provide healthcare services to patients and caregivers[9]. Another cadre of healthcare professionals is the one that comprise of people holding bureaucratic positions in the organization who manage the services along with the care providers[10]. This cadre of

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professionals is involved in clinical governance, monitoring those structures, systems and processes that ensure quality, accountability and optimum management of an institution's operation and delivery of services. All of them are major stakeholders in facilitating healthcare provisions to remote parts of our country and making the services better by engaging with the patients.

Healthcare facilities like hospitals, long-term care facilities, home health agencies, ambulatory surgery centres, community group homes and other ancillary providers seek improvement in operational efficiency, cost reduction in care delivery and accurate quality measurement of their services through m-health apps[11].

Apollo through its prism app manages health records of various patients which are collected during doctor consultancies[12]. The personal health record/medical reports can be accessed anytime anywhere.

Apollo also provides telemedicine facilities to deliver healthcare services remotely[13]. They propose sharing of reports and images with the clients/patients for better diagnosis and investigation of their health conditions[14]. This facility can also be helpful for physicians to get in touch with their peers in distant parts of the country for discussing complex cases[15] or for physician to client/patient communication. Platforms like these can contribute towards fighting the COVID-19 health crisis when our health infrastructure is getting burdened with the exponential growth in coronavirus cases[16].

Apollo M.I.N.D Line is a helpline which provides psychological tele-counselling to support individuals with mental health issues[17]. Apart from Apollo, Airtel Doctor provides healthcare based consultancy services to patients[18].

Researchers may use m-health sources to generate better data for use in clinical trials[19]. For example, the Common Application Software (ICDS-CAS) loaded into mobile devices of Anganwadi workers was used under Poshan Abhiyan to identify children at risk, their upcoming immunization dates, and to manage all such sorts of data more efficiently. The captured data can then be used to make prompt interventions wherever required[20].

The developers of various m-health applications target sections of consumers according to their needs/ ailments. Since mobile health market is rapidly in-

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creasing, big pharmaceutical or biotech companies are ready to invest in these m-health applications[21]. But the major challenge is to combine the knowledge of healthcare industry with the experience of IT; the extent of overcoming this hurdle might assure the better quality of an app[22].

Similarly policy makers and legislators who decide upon the regulations for m-health and telemedicine facilities are stakeholders in the business, as all of the above entities[23].

M-health facilities help midwives and Accredited Social Health Activists (ASHA) to consult and share information with other health professionals to improve data collection and establish social connectivity which enables midwives and ASHA workers to effectively help women with reproductive health issues[24][25]. M-health technology helps in remote access to clinical information, critical health indicators and tracking patient's health condition[26]. The relationship between midwives and physicians established through m-health sources facilitate emergency referral and transport of cases[27].

M-health data collection can further be used to identify gaps in maternal health care[28]. An example can be taken from Senegal, where the Ministry of health in collaboration with WHO and Datadyne, a social enterprise based in Africa, began a pilot project to improve maternal and child health while reducing their mortality at the same time[29]. Maternal health data was collected through a software called Episurveyor (created by Datadyne) via mobile phones during postpartum[30] visits to communities[31]. The data of first 6-month pilot revealed that partograms were not being adequately used by the health workers to monitor labour progress of expectant mothers[32]. A partogram gives a pictorial overview to health professionals regarding labour progress, maternal and foetal well-being etc. to allow early identification and diagnosis of pathological labour[33]. Its use is of critical importance in preventing maternal and prenatal morbidity and mortality[34]. Therefore, looking at the results of the survey, the Health Ministry of Senegal distributed partograms to health workers making them aware of its need and usage[35].

M-health data collection can further be used to identify gaps in maternal health care

[21] Jain, J., Udiniya, P., Sahoo, K. P.(2017), Qualitative study to analyze the pros-cons and consumer's perception towards mHealth apps, The Pharma Innovation Journal, 6(7): 43-48. Retrieved from: http://www.thepharmajournal.com/archives/2017/vol6issue7/PartA/6-7-9-278.pdf

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[28] Speciale, M.A., Freytsis, M.(2013), mHealth for Midwives: A Call to Action, Journal of Midwifery &Women's Health, Retrieved from: https://pubmed.ncbi.nlm.nih.gov/23317302/

[29] Speciale, M.A., Freytsis, M.(2013), mHealth for Midwives: A Call to Action, Journal of Midwifery &Women's Health, Retrieved from: https://pubmed.ncbi.nlm.nih.gov/23317302/

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Reducing Maternal and Newborn Deaths (ReMiND) program was introduced in two blocks of Kaushambi district in Uttar Pradesh, India where m-health application was used as an open source platform to work as job aid for ASHA workers[36]. The application tracks and supports clients for ASHA workers and provides services on individual basis, including counseling needs which aimed at improving knowledge of pregnant women regarding maternal and child healthcare.

The intervention by ReMiND resulted in a significant increase in iron and folic acid tablet consumption among pregnant women (12.7%), abdominal examination during antenatal checkups (18.7%), identification and self-reporting about complications (13.20%) and post-delivery medical attention[37]. ReMiND program helped in recognizing the danger signals during and post pregnancy leading to reduced maternal and child mortality[38]. This program focused largely on preventive care and led to a reduction of illness during pregnancy-such as anemia and hypertension, after child birth and during neonatal period.

Kilkari is another nationwide mobile health program launched by Government of India in January 2016. The program delivers free weekly, time appropriate, audio messages about pregnancy, child birth and child care to the mobile phones of expecting mothers/ her family starting from the second trimester of pregnancy until the child is a year old[39]. Kilkari's objective is to spread awareness among families regarding family planning, reproductive, maternal, neonatal and child health, sanitation and hygiene so that they resort to healthy living.

Kilkari is audio-based and not text-based service to increase accessibility of information, guidance and support. In its first phase Kilkari has reached Jharkhand, Madhya Pradesh, Odisha, Rajasthan, Uttarakhand and Uttar Pradesh where it continues to engage with expectant parents as well as the ASHA workers and ANMs to further help out the beneficiaries.[40] Therefore, ANMs and ASHA workers are also stakeholders of Indian m-health market.

Apart from the interventions in reducing maternal and child mortality, the government of India had introduced Nikshay, a web based application which facilitates monitoring of Tuberculosis (TB) surviving patients by medical personnel[41]. This application helps in keeping the track of TB patients at the grass-root level and extending help as and when required. Then there is Na-

[36] Prinja, S., Bahuguna, P., Gupta, A., Nimesh, R., Gupta, M., Thakur, T.S. (2018), Cost effectiveness of mHealth intervention by community health workers for reducing maternal and newborn mortality in rural Uttar Pradesh, India, Cost Effectiveness and Resource Allocation, Retrieved from : https://resource-allocation.biomedcentral.com/articles/10.1186/s12962-018-0110-2

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tional Organ Transplant Organization which spreads awareness regarding organ donation amongst people through SMS services[42].

Dr SMS is another initiative by Kerala government which makes medical information and diagnostic facilities accessible to citizens via SMS[43]. Similarly the M-cessation program by Government of India aims at reaching out to those who are willing to quit tobacco through text messages[44]. The messages provide support towards successful quitting and stand superior to traditional interventions for cessation. So the government is also major stakeholder in mobile healthcare in India.

The future of mobile health applications and telemedicine facilities depend on all these stakeholders. They contribute towards making the services better, the platforms more user friendly by sharing their preferences, boost productivity in health management at low cost and make the healthcare infrastructure overall more adaptable and accessible to people from various sections of the society and parts of country[45].

[42] Ahamed, F., Palepu, S., Dubey, M., Nongkynrih, B.(2017), Scope of mobile health in Indian health care system – the way forward, International Journal of Community Medicine and Public Health, 4(4):875-881, Retrieved from: https://www.researchgate.net/publication/315676882_Scope_of_mobile_health_in_Indian_health_care_system_-_the_way_forward

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